

## REMARKS

Applicant respectfully requests reconsideration of the Examiner's rejection of claims 9-16 as being unpatentable over Chang in view of Smith and further in view of Beshai.

The Examiner states that, according to the M.P.E.P, he should give the claims their broadest reasonable interpretation in light of the supporting disclosure. However, applicant respectfully submits that the interpretation given by the Examiner to the terms "connection" and "link", as used in the main claim 9 in light of the whole application, is unreasonably broad.

The Examiner starts with a definition taken from "The American Heritage College Dictionary" for the term "connection", and then explains that the inventor may define specific terms used to describe the invention, but must do this with reasonable clarity, deliberateness and precision.

When the claims are analyzed, the fact that claim 9 clearly recites: "the connections utilizing the network nodes and network links" is ignored, and the terms "link" and "connection" are taken by the Examiner to mean the *same* thing. It is clear, however, from the wording of claim 9 that these are two *different* terms. A connection is established over a link or links. See, for example, page 6, last line - page 7, second line of the PCT publication, as follows:

*"However, the network is capable of supporting on any link 7 only one connection at each of the 'n' wavelengths, i.e., the maximum number of possible connections on any link 7 is 'n'."*

or, see page 11, second paragraph, as follows:

*"The network of Figure 3 consists of four network nodes N1, N2, N3, N4 and three network links L1, L2, L3. Each link L1, L2, L3 is capable of supporting*

*a connection on each of wavelengths  $\lambda 1$  and  $\lambda 2$ , i.e., the aforesaid 'n' equals two."*

or, see page 11, third line from the bottom, as follows:

*"A new request (5) arrives for a low priority connection on links L2 and L3."*

As illustrated in the figures of the present application, and especially Figure 3, a link physically connects network nodes. A connection utilizes network nodes and network links, which means that in order to set up a connection, a link and connecting nodes must exist.

With this background in mind, ***turning now to the rejection of claim 9:***

(i) In the rejection, the Examiner contended that Smith disclosed an ***unreconfigurable*** connection (paragraph 79). However, upon reconsideration, the Examiner will note that Smith disclosed:

*"...the first link between node A and the first intermediate node along the path is fixed;"*

Hence, Smith disclosed a ***fixed*** link, and ***not*** an unreconfigurable connection. As discussed earlier, claim 9 makes a clear distinction between links and connections. Smith explains what a link is in paragraph 34:

*"To summarize, network 1 comprises bidirectional fiber links 10 connecting a plurality of nodes, which are nodes A, B, C, D, E, F, Z in the example of FIG. 1."*

The links in Smith's disclosure physically connect nodes as links in claim 9 of the present application. Therefore, the links in Smith's disclosure cannot be equated with the

connections of claim 9. Smith's disclosure is **not** about an unreconfigurable connection. It is about a fixed link.

In consequence, the combination of Chang, Smith and Beshai fails to disclose a network management system operative for storing information as to which current connections are reconfigurable and which are not. It cannot store this information, because this information is not available in the network.

(ii) In the rejection, and specifically in the response to the applicant's earlier arguments, the Examiner contended that Chang disclosed a network management system allocating connections to the network. Again, claim 9 and the accompanying description make it clear that a link and a connection are two **different** things. As an evidence of Chang disclosing this limitation, the Examiner cited paragraph 104. This paragraph, however, first discloses that information contained in an optical signaling header 210 is used in the process of setting up a connection and then explains:

*“Each WDM network element 121-125 senses optical signaling header 210, looks-up a connection table (discussed later), and takes necessary steps such as cross-connections, add, drop, or drop-and-continue.”*

This, however, is a disclosure of a network element (node 121-125) setting up a connection! The only role of the network management system disclosed in paragraph 104 is updating a connection table. Updating a connection table is not the same as setting up a connection.

Paragraph 111 of Chang makes this distinction even clearer, as follows:

*“In operation, module 410 taps a small fraction of the optical signals appearing on paths 401-403 in order to detect information in each signaling*

*header 210, and determine the appropriate commands for switching device 430 after looking up the connection table stored in module 410. The fiber delay is placed in paths 401-403 so that the packet having header 210 and payload 211 reaches switching device 430 only after the actual switching occurs. This fiber delay is specific to the delay associated with header detection, table look-up, and switching, and can typically be accomplished in about 10 microseconds with about 2 km fiber delay in fibers 415-417.”*

It is clear from this disclosure that the network management system of Chang has ***nothing to do with setting up a connection.*** Chang might have disclosed the network management system establishing an optical link between the nodes of a network, but, as discussed earlier, the terms “link” and “connection” refer to different things in the present invention, and are also clearly different things in Chang's disclosure.

In consequence, the combination of Chang, Smith and Beshai fails to disclose a network management system for allocating connections to the network, as required by claim 9.

***Turning now to the rejection of claims 11 and 12:***

In the rejection, the Examiner contended that Chang discloses that the network management system reconfigures a reconfigurable connection by changing a wavelength on which the connection is made or a route taken by the connection. These features are allegedly disclosed in Figure 2 -- alternative wavelength and alternative path.

The meaning of the term “reconfigurable”, as used in claim 9, can be easily derived from claim 9 itself, where it is explained that the reconfiguration is performed on an existing

connection in the network. This means that a connection must exist, and be configured, in order to be reconfigured. This is, in fact, the common understanding of the term “reconfiguration”.

Paragraph 105 of Chang explains the situation illustrated in Figure 2. In Chang, the presence of an alternative path and an alternative wavelength in Figure 2 does **not** mean that once a connection is established (configured), that any of these can be changed. Chang only discloses that if one wavelength is occupied by another packet, then there is another wavelength (the alternative wavelength) to establish a connection and, similarly, if a preferred path for a connection is taken, then there is an alternative one that can be used to set up the connection. Chang, however, is silent about reconfiguration of an existing connection by changing a wavelength or a route.

Therefore, the limitations of claims 11 and 12 are **not** disclosed by the combination of Chang, Smith and Beshai.

***Turning now to the rejection of claim 14:***

In the rejection, the Examiner interpreted paragraph 113 of Chang as a disclosure of each connection comprising a main path and a stand-by path. However, applicant respectfully submits that there is nothing like this disclosed in paragraph 113. The fact that NC&M computes and updates routing tables does **not** mean that, for each connection, main and stand-by paths do exist.

The disclosure of paragraph 113 is limited to functions of a routing protocol that include obtaining parameters related to operation of the network, providing this obtained information to NC&M, computing by the NC&M the routing tables using the received parameters, updating the routing tables with information received from each network elements, and forwarding the routing tables and other routing information to network elements. **None** of the elements of the routing protocol of Chang disclose that each connection comprises a main path and a stand-by path.

Therefore, the limitations of claim 14 are **not** disclosed by the combination of Chang, Smith and Beshai.

***Turning now to the rejection of claim 15:***

In the rejection of claim 15, the Examiner relied upon Figure 2 of Chang. The applicant, once again, would like to draw the attention of the Examiner to the fact that the alternative path and the alternative wavelength disclosed by Chang can be used before setting up a connection. This may happen when a preferred path or a preferred wavelength is taken and not available. There is **nothing** in Chang's disclosure that any these alternatives can be used to reconfigure an existing connection. Chang is simply silent about reconfiguration of an existing connection.

Therefore, the limitations of claim 15 are **not** disclosed by the combination of Chang, Smith and Beshai.

Wherefore, a favorable action is earnestly solicited.

Respectfully submitted,

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